Biomolecules Review

1. Identify the the type of biochemical reaction occurring in each of the following:

a. 3 fatty acids + glycerol --> fat + 3 water

b. protein + water --> amino acid + amino acid

c. polysaccharide + 2 water --> glucose + glucose + glucose

d. amino acid + amino acid --> protein + water

e. fat + 3 water --> 3 fatty acids + glycerol

f. glucose + glucose + glucose --> polysaccharide + 2 water

2. How many bonds occur in each element:

a. carbon -

b. oxygen -

c. nitrogen -

d. hydrogen -

3. Which biomolecule has the following functional groups?

a. COOH and OH -

b. OH and OH -

c. NH2 and COOH -

4. Saturated or Unsaturated?

a. CH3CH2COOH -

b. CH3CCCOOH -

5. Name the monomers that make up the following polymers

a. protein

b. lactose

c. maltose

d. sucrose

e. glycogen

f. lipid

6. Identify the Biomolecules of the Body that relates to the following:

a. Insulation -

b. Muscles, antibodies, hemoglobin, enzymes -

c. Quick energy, blood sugar -

d. Glycogen in liver-

7. How many different amino acids are there?

8. What is the difference between starch and glycogen?

9. The group of atoms in a molecule where reactions happen (and also allow for easy identification as to the type of molecule) is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ group.

10. Why is the activity of an enzyme like a lock and key?

11. How are monosaccharides, disaccharides, and polysaccharides (starch, etc.) related to each other?

12. Through the reactions of dehydration synthesis and hydrolysis, what important molecule is always part of the processes?

13. Catalase is an example of an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. What kind of biomolecule is it?

14. Which biomolecule contains the largest amount of energy in its bonds?

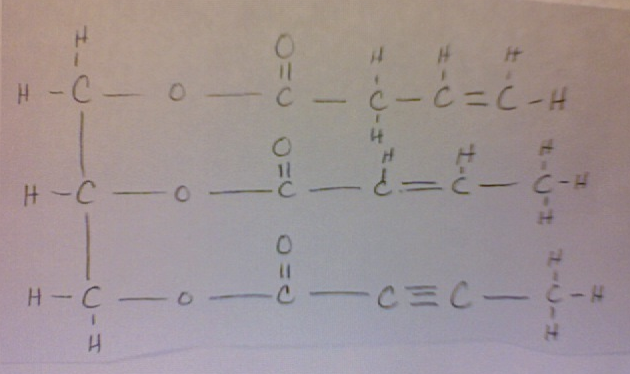
15. How can an enzyme become unusable?

16.

a. What process would be used to break the following molecule apart?

b. What is this molecule called?

c. What other molecule is needed for the reaction to happen?



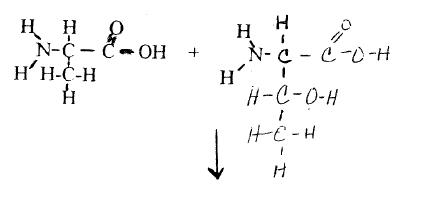
d. What would the end products of the reaction be? (draw and label the molecules)

17.

a. What process would be used to put these two monomer units together?

b. What are these monomer units called?

c. What other molecule must be removed in order for the reaction to happen?



d. Draw the end product of the reaction (draw and label the molecules.)